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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,589

10/01/2003

Frank Bergmann

M&N-IT-490

7994

24131

7590

12/01/2005

LERNER AND GREENBERG, PA  
P O BOX 2480  
HOLLYWOOD, FL 33022-2480

EXAMINER

WONG, TINA MEI SENG

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/676,589		BERGMANN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Tina M. Wong		2874	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on <sup>18 October</sup>~~22 November~~ 2005 has been entered.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent 6,491,447 to Aihara.**

In regards to claim 1, Aihara discloses a connecting area (31 underside, Column 6) for connecting a transmitting or receiving module (37), a holding area (52) for holding an optical fiber (15) and a transparent coupling area (31a) for directly contacting the optical fiber and directly coupling (33) the light between the optical fiber and the module when the fiber is inserted into the holding area. Aihara further discloses the transparent coupling area to be formed integral with the holding area and connecting area. Furthermore, since the coupling area,

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holding area and connecting area are all formed as the same one piece (reference number 31), they are all formed of the same material. (Figures 5A-5C)

In regard to claim 2, Aihara discloses all discussed above and further discloses the coupling area having side facing the holding area and a projecting stop (33) for the optical fiber, where the stop surface directly contracts the fiber core when the fiber is inserted into the holding area.

In regards to claim 3, Aihara discloses all discussed above and further discloses the holding area to have a longitudinal axis and the stop surface to run at right angles to the longitudinal axis of the holding area.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,491,447 to Aihara, as applied to claim 1 above, and in further view of U.S. Patent 6,793,406 to Edwards et al.**

In regards to claim 4, Aihara discloses all discussed above but fails to specifically disclose the refractive indexes of the optical fiber and the coupling area to match. However, Aihara does disclose the transparent coupling area to be molded of glass or a similar material in order to achieve a high optical coupling efficiency. Furthermore, glass is a widely used material

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in the manufacturing of optical fibers. For example, Edwards et al discloses a similar coupling unit with a glass spacer and a glass fiber core with similar refractive indexes in order to reduce the spreading of the outputted light beam and therefore improve optical coupling efficiency. Furthermore, it is difficult to exactly match the refractive indexes due to a margin of error; a similar value of the two refractive index values would fall within the margin of error. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used an optical fiber and coupling area with a matched refractive index, since Aihara and Edwards et al both disclose a similar objective, which is to increase optical coupling efficiency.

**Claims 5 and 7-12 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,491,447 to Aihara, as applied to claim 1 above.**

In regards to claim 5, Aihara discloses all discussed above and further discloses a coupling area having a side facing the transmitting/receiving module. But Aihara fails to specifically disclose the side facing the module to have an inclined light inlet/outlet surface. However, Aihara does disclose the coupling area to have an included surface (34). This inclined inlet/outlet surface is for the purpose of controlling the light reflected, the same purpose as Applicant states for their inclined surface. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have side facing the module to have an inclined light inlet/outlet surface since they both perform the same function and Applicant has not disclosed that a projecting stop on the coupling area solves any stated problem or is for any particular purpose and it appears the invention would work equally as well with the inclined angle placed as suggested by Applicant or placed as disclosed by Aihara.

In regards to claim 7, Aihara discloses a horizontal running base plate (32) formed with the coupling area, there the base plate has an upper face connected to the holding area and a lower face connected to the connecting area. But Aihara fails to specifically disclose the holding area to extend at a right angle with respect to the upper face of the base plate. Although Aihara discloses the holding area to extend parallel with respect to the upper faceplate, the resultant path of the light beam remains substantially similar. The light beam will travel through the optical fiber, the coupling area and the connected area. Furthermore, since Applicant has not disclosed placing the holding area perpendicular to the upper face of the base plate solves any stated problem or is for any particular purpose and it appears the invention would work equally as well with either orientation of the holding area, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have placed the upper surface of the base plate at a right angle with respect to the holding area.

In regards to claim 8, although Aihara does not specifically disclose the holding area to form an elongated sleeve with a precision guide, Aihara does disclose a precision guide (67). Furthermore, in a modified form of Figure 5, Figure 8 shows a connector (61) connected to the transparent structure and receptacle to form a unitary piece. Furthermore, Figure 8 shows an elongated sleeve to hold the optical fiber. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have a holding area with an elongated sleeve and a precision guide (67) in order to further ensure a more accurate coupling of the optical fiber.

In regards to claim 9, Aihara discloses all discussed above but fails to disclose a ferrule to be a ceramic ferrule. Although Aihara is silent on a ferrule being able to be held in the holding

area and the material of the ferrule, placing a ferrule around an optical fiber is widely used in order to protect the ferrule from external factors. Furthermore, the use of a ceramic ferrule is widely used for holding optical fibers and since a ceramic ferrule is a non-electrically conductive material, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used a ceramic ferrule.

In regards to claims 10 and 11, Aihara fails to specifically disclose the connecting area to be cylindrical in order to connect a TO can. However, Aihara does disclose the connecting area to be any part of the underside surface of the transparent structure. Therefore, in order to connect a TO can, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have a cylindrical connecting area on the underside surface of the transparent structure.

In regards to claim 12, Aihara discloses all discussed above and further discloses a horizontally running base plate, the base plate having an upper surface area connected to the holding area and a lower face connected to the connected area. But Aihara fails to specifically disclose the holding area to extend at a right angle with respect to the upper face of the base plate. Although Aihara discloses the holding area to extend parallel with respect to the upper faceplate, the resultant path of the light beam remains substantially similar. The light beam will travel through the optical fiber, the coupling area and the connected area. Furthermore, since Applicant has not disclosed placing the holding area perpendicular to the upper face of the base plate solves any stated problem or is for any particular purpose and it appears the invention would work equally as well with either orientation of the holding area, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have

placed the upper surface of the base plate at a right angle with respect to the holding area.

Aihara further fails to disclose the base plate having a cutout passing through the base plate, the cut out running adjacent to the coupling area of the base plate. However, in Figures 1, 2, 3 and 4, Aihara shows a modified version of Figure 5, which includes a cutout passing through the base plate and running adjacent to the coupling area of the base plate in order to optically connect all of the components. Therefore, although Aihara does not explicitly state a cutout, Aihara does show a cutout in the transparent structure in order to connect all of the optical components.

**Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,491,447 to Aihara as applied to claim 1 above and in further view of Applicant submitted reference Germany 33 16 236 A1 to Roberts.**

Aihara discloses all discussed above and further discloses the coupling area to be a molded transparent glass or synthetic resin. But Aihara fails to specifically disclose the coupling unit to be injection molded. However, Roberts discloses a similar module where an optical fiber is coupled to at least two optical elements and fitted into holding and connecting areas through a transparent block. Roberts et al further discloses the coupling unit to be injection molded. Since Aihara is silent on the process the coupling unit is made and Roberts discloses a similar module with the coupling unit injection molded, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have injection molded the coupling unit.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.



### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference B discussed a similar coupling structure formed with similar materials.

### ***Inventorship***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

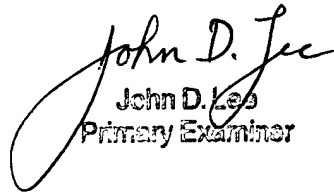
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMW



John D. Lee  
Primary Examiner